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ABSTRACT

This study describes an effort to determine what teachers talk about during their team meetings and to characterize the types of contributions teachers make to their decision-making tasks. Eleven teams of volunteer teachers, used in a previous study (Molner, 1971 SP 005 510), supplied material for audio tapes. Teams met approximately once a week, and the data was originally gathered over a 3-month period (March-May 1970). Team size ranged from three to eight members. Discussions reflect three areas of concern: a) the request and offer of professional assistance, b) the use of technical and personal expertise, and c) the evaluation of team and individual efforts relating to the functioning of the team. Each meeting was listened to by two observers whose task was to identify major agenda items within the meeting. The observers identified 1) the agenda items, including descriptive titles for each item; 2) the starting and ending point of each item; and 3) the major components discussed within each agenda item. The content analysis instrument was composed of eight types of communication identified as representing different features of a team discussion. The content analysis instrument differentiated the kinds of comments made by team teachers discussing different topics. These differences validate at least some of the categories in the content analysis. Reliability for this study is not entirely satisfactory and indicates the need for refinement of the content analysis instrument. A 2-item bibliography is included. (MJM)

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THE ANALYSIS OF TEACHERS' TASK CONTRIBUTIONS TO DECISION-MAKING INTERACTION: DIFFERENCES IN THREE CONTENT AREAS AND TWO TYPES OF TEACHING TEAMS

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This is a preliminary draft. Portions of this paper, with revision, will be incorporated in a report to be submitted for publication by the Stanford Center.

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INTRODUCTION

When a group of teachers is responsible for the instruction of one group of students, the teachers must spend time in collective decision-making efforts (Molnar, 1971). Decisions made by the group at formal team meetings are binding on individual teaching behavior, particularly in schools where teachers are visible to one another as they perform their instructional tasks. The study reported here represents an effort to determine what teachers do talk about during their team meetings, as well as to characterize the types of contributions teachers make to their decision-making tasks.

The collegial contact made possible by the emergence of team teaching has potential for improving both the job situation of teachers and the kind of instruction which takes place in classrooms. Teachers in non-team-teaching schools have been isolated from meaningful contact with other professionals. The teaching team could serve as a source of encouragement to teachers to pursue their professional development and thus to improve instruction. If teams are serving this function, teachers should be requesting and offering assistance to one another, using knowledge about curriculum and learners, offering insights gained from personal experience in teaching, and evaluating both their team efforts and their individual teaching performances. These and other features of the content of teaching team discussions were used in this study to describe the content of team planning discussions of two types of teaching teams.

TEACHING TEAMS

The discussions observed consisted of a set of agenda items derived from audio tapes of actual team teachers' meetings, recorded during a previous study (Molnar, 1971). These were formal planning meetings of formally constituted teaching teams:

> "...a group of teachers who share major responsibility for the instruction of the same group of students, and who coordinate their instructional activities among themselves. This definition includes two major concepts: (1) formal recognition by the school organization of shared responsibility, and (2) implementation of shared responsibility through teacher-group coordination of individual and group instructional activities. The first concept rules out informal cooperative arrangements. The second concept rules out formally constituted groups which do not engage in cooperative instructional activities." (Molnar, 1971, p. 5,)

The previous study of these same teaching teams identified two types of teams on the basis of the distribution of participation in the decision-making interaction. Balanced teams were those in which all members contributed equally and actively to the decision-making interaction, while unbalanced teams were those in which one or two members tended to dominate the interaction while other members contributed little (see Molnar, 1971). The present study sought to determine whether there are differences in the content of discussions of balanced and unbalanced teams.

Teachers expect to be professional equals, and the teams studied were officially regarded as "equal-status" teams -- no official team leader or status differentiations such as "master teacher" or paraprofessional. In teams with equal-status expectations, teachers on balanced teams feel more influential and autonomous than teachers on

unbalanced teams (Molnar, 1971). Since the unbalanced team violates teachers' expectations, those teams do not seem to function as well in making decisions about the instructional program. The extent to which teaching teams (1) request and offer professional assistance, (2) use technical and personal expertise, and (3) evaluate their team and individual efforts may well be related to the general functioning of the team. Therefore, in the present study the prediction was made that the balanced teams identified in the earlier study, compared to those unbalanced teams, would show higher proportions of remarks reflecting the three above areas.

CONTENT ANALYSIS INSTRUMENT

An instrument was developed for determining the extent to which teaching team discussions do reflect the three areas referred to in the previous section. Eight types of communications were identified as representing different features of a team discussion:

1. An "out of field" category was used to characterize remarks which diverged from the task at hand. An example would be a brief discussion about a teacher's recent absence, if the remarks were unrelated to the task of planning the math lessons for the following week. If the same absence clearly affected the planning discussion, the remarks would not be out of field, of course.

2. Concrete Level. This category included all remarks which contained no overt reasoning (e.g., of the "if...then" variety), information, illustration, certain types of informational or clarifying questions, answers to questions (of the "yes" or "no" variety), etc.

3. Analytic Level. Any remark which showed overt reasoning, but which did not fall in categories four to eight below, was included here. Examples are "if...then" statements and variants of "if...then" statements of the type containing "although, but, however," etc. clauses.

4. Professional Assistance. All requests for and offers of assistance were included here. Agreement to a request for assistance, even if the agreement consisted of a simple "yes," was also coded as professional assistance.

5. Expertise. Two types of expertise were identified. The first was "technical expertise," consisting of overt reference to subject-matter knowledge, or to knowledge of children, child development, learners and learning. The use of technical terminology was often a clue to the speaker's reference to such bodies of knowledge. Any knowledge appropriate to the tasks of the teachers was regarded as legitimate expertise.

The second type of expertise was that based on the teacher's personal experience working with learners in the school setting. To qualify as personal expertise, a remark had to contain some reference to the specific experience and/or some reason why the speaker regarded the experience as contributing to the task at hand.

6. Evaluation of discussion contributions. When a speaker made evaluative reference to another individual's contribution at the planning meeting, and included reason for the evaluation, the remark was included in this category.

7. Evaluation of team efforts. Remarks containing references to past performance of the team, to their past decisions and how they worked out, were evaluative if reason was given for the evaluation. "I thought it was fine," was not evaluation -- it was considered opinion --

whereas "I thought it was fine, because the kids were so engrossed in what they were doing," was considered as evaluative.

8. Evaluation of teaching performance. Reference to a teacher's performance when working directly with students was considered evaluation here if a reason was given for the evaluation. This category included a speaker's reference to his own, as well as to other teachers' performance.

These eight categories, referred to in this paper as "act categories," are described more fully in the coding manual developed for training coders. The expertise category, it should be noted, consisted of any knowledge appropriate and necessary for the accomplishment of teaching tasks. If second-grade teachers plan art lessons using paper-bag masks, this is expertise. While people who are not teachers may also be privy to such knowledge, that possibility alone does not rule out that expertise is involved in teachers' use of such knowledge in planning activities for children.

The evaluative categories were made stringent in the necessity that a reason be given for the evaluation,because such reasons are critical for professional development and analysis of performance. If liking-disliking is all that is expressed, the recipient of such remarks is not much wiser in planning for future task performance. Moreover, the kind of analysis implied in the requirements for the evaluation categories seems particularly necessary for discussions in an occupation like teaching, where standardized knowledge is not available for most contingencies and the teacher must be an inventor as well as a consumer of technical knowledge.

Agenda Items

Each meeting was listened to initially by two raters, whose task was to identify major agenda items within the meeting. Each rater identified independently: (1) the agenda items, including a descriptive title for each item, (2) the starting and ending point of each item, and (3) the major components discussed within each such agenda item. Each pair of raters then compared their characterizations of each meeting and reached agreement on differences in designated agenda items. There was very little difference between raters in their selection of major agenda items, and typically the two raters selected identical starting and ending points for each item. Occasionally one rater had combined items which the other rater listed separately, and occasionally the two raters chose slightly different starting or ending points for an item. However, the raters experienced little difficulty in reaching agreements.

The rater-selected agenda items were then sorted by title to determine general categories of discussion at the meetings. The eight categories identified were (1) Discussions of problems of team teaching and open space schools; (2) Selection and planning of curriculum and activities; (3) Scheduling; (4) Maintenance functions -- record keeping, ordering supplies, etc.; (5) Extra-curricular activities for teachers, such as district meetings, school open house, etc.; (6) Problems of learners; (7) Classroom management and control. Four of these categories were selected for coding with the content analysis instrument.

Categories two and three remained, while categories seven and eight were eventually combined since discussions of them tended to overlap into a general category, "Learners." The three categories (referred to as "agenda categories") which were coded, then, were: (1) Curriculum Planning, (2) Scheduling, and (3) Learners.

The scheduling of activities is a routine, mechanical task, consisting wholly of finding time of the day or week in which a given activity will occur. There is little reason during such scheduling discussions for teachers to display expertise, to offer professional assistance, or to evaluate teaching efforts. Hence, the prediction was made that act categories four through eight would contain fewer acts for agenda items categorized as Scheduling, compared to discussions categorized as Curriculum Planning or Learners.

METHOD

Coding of Act Categories

Observers who were all former elementary school teachers were trained in the use of the instrument, until they reached criterion. Observers were instructed to listen to an agenda item once before beginning to code. They then coded each separate communication from a single speaker as an "act." Interruptions, especially of the brief "mm-hm" variety were not coded as separate acts unless the interruption succeeded in shifting the focus of the speaker's remarks, or unless a direct question was asked or answered. If a speaker's act seemed to be codable into more than one act category, the act was coded in the category with the highest number. Beside the coding of the act category for each communication, the observer also wrote a few key words which would enable him to identify the specific remark coded if this became necessary later.

Each agenda item selected for coding was coded by two observers. Reliability was measured with χ^2. Since some reliability coefficients were less than 0.60, a pair of observers went over their coding together, discussing each communication on which they differed, and reaching agreements on differences. This was repeated several times with different pairs of observers. In each case, the totals for the agreed-upon coding were close to an average of the two original totals. For this reason, observers' scores were averaged to obtain the total scores for each agenda item. Reliability for this study is not considered entirely satisfactory, and indicates that the content analysis instrument needs refinement. However, for the exploratory purposes of this investigation, the decision was made to continue with the data analysis.

Sample

In the original study (Molnar, 1971) for which these audio tapes were made, there were 17 teams, 11 unbalanced and 6 balanced. Some of the tapes were, however, not usable for detailed coding. Thus, in the final sample for the present study, there was sufficient usable data for only 11 teams. For agenda categories one and two, Curriculum Planning, and Scheduling, there was data available for nine teams; for agenda category three, Learners, data was available for only seven teams. For agenda category one, there were five unbalanced and four balanced teams. For agenda category two there were six unbalanced and three balanced teams. For agenda category three there were four unbalanced and three balanced teams.

These teams met approximately once per week, and the data was originally gathered over a three month period (March-May, 1970). Team size ranged from three to eight members. All teachers had volunteered for the original study. In the present study, five schools in two school districts are represented. Two of the schools had just opened in fall of 1970, while the other three schools had been in operation for at least two years.

RESULTS

Approximately 5,000 separate acts were coded in all eight act categories and the three agenda categories, for the 11 teams. Portions of 33 different meetings were coded, with a total of 55 agenda items included. Thus the average number of remarks coded for one agenda item was just less than 100.

For each team, total scores were obtained for each act category for all agenda items within each agenda category. Since total acts for agenda categories varied from team to team, raw scores within each agenda category were transformed to yield comparable scores among teams within and among agenda categories. The transformation formula used was

$$X_t = \frac{X_r T_r}{C}$$

where X_t is the transformed score for one act category for one team, X_r is the raw score for one act category for one team, T_r is the total number of acts for a team within that agenda category, and C is a constant. The constant used for each agenda category was 200, since that

figure came closest to the mean number of total acts for all teams within each agenda category.

Transformed scores for all teams for each act category across agenda categories were then totaled to yield a total score for each act category for each team, and a total score for all teams (see Table 1).

Table 1

Transformed Act Category Scores for Combined Agenda Categories for all Teams

Act Categories

	1	2	3	4	5	6	7	8
Transformed Scores	350	3207	355	325	677	51	24	11
Mean Acts per Team (N = 11)	32	291	32	30	62	05	02	01
Per Cent of Total Acts	07	64	07	07	14	01	005	002

Table 1 indicates that 64% of the total remarks made by teachers fell in act category two, Concrete Level. Act category five, Expertise, includes 14% of all remarks, while act categories one, three, and four, Out-of-Field, Analytic Remarks, and Professional Assistance, each include seven per cent of teachers' remarks. The three evaluation categories (six, seven, and eight) together account for less than two per cent of all re arks made at the observed meetings. These three categories were dropped from further formal data analysis.

About 22% of all acts were included in those categories regarded for this study as important features of teachers' discussions about their instructional program, act categories four through eight. Thus categories one through three contained 78% of all acts. These three categories would be expected to occur during any similar task-group discussion whether or not teachers were involved. It is not possible to interpret these findings in terms of how "good" the teams look with this profile. Instead, the questions to be investigated concern differences in the distribution of scores in act categories for different agenda items and for different types of teams.

The absence of over-evaluative comments from these team meetings suggests that an important function is not being carried out in teams, at least during formal planning meetings. If no evaluation is being made of team or individual efforts, one wonders what basis team teachers are using to make decisions about their instructional programs. In any case, this finding indicates that teams may be no more successful than individual teachers in basing decisions on evaluation of past efforts.

Agenda Categories

Combined scores for all teams within each agenda category are shown in Table 2. There do seem to be differences among agenda categories in the proportion of the act categories regarded here as important contributions to teachers' decision-makings. For Curriculum Planning, act categories four and five combined, Professional Assistance and Expertise, contain 20% of all remarks. The same act categories contain only 11% of the remarks in the Scheduling agenda category, but 33% of the remarks in the Learners agenda category.

The prediction made regarding these differences between agenda categories was that Scheduling would contain a smaller number of remarks in act categories four and five than would Curriculum Planning or Learners.

Table 2

Transformed Act Category Scores for three Agenda Categories for all Teams

Agenda Categories	Act Categories 1	2	3	4	5	4-5 Combined
1. Curriculum Planning						
Total Score	98	1210	111	102	249	351
Mean for all Teams (N = 9)	11	134	12	11	28	19.5[a]
Per Cent of Total Acts	06	67	06	06	14[c]	20
2. Scheduling						
Total Score	123	1304	156	177	119	296
Mean for all Teams (N = 9)	14	145	17	8	13	10.9[a] (N = 18)
Per Cent of Total Acts	07	73	08	05	06	11
3. Learners						
Total Score	129	693	88	146	309	455
Mean for all Teams (N = 6)	18	99	13	21	44	32.5[b] (N = 12)
Per Cent of Total Acts	09	50	06	11	22	33

(a) Combined N = 18

(b) Combined N = 12

(c) Per cents may not add to 100 since categories six through eight have been omitted.

The differences in mean acts shown in Table 2 were tested for statistical significance using the one-tailed test for differences in sample means (Hays, 1963). Comparing the mean number of acts for Scheduling with the mean number of acts for Curriculum Planning yields $t = -2.056$, with 34 degrees of freedom statistically significant with $p < 0.025$. Similarly, the mean number of acts for Scheduling compared to the mean number of acts for Learners yields a $t = -2.920$, with 48 degrees of freedom, statistically significant with $p < 0.005$. Teachers do make more requests for and offers of professional assistance, and do use more technical and personal expertise when they are discussing Curriculum Planning or Learners than when they discuss Scheduling.

Balanced and Unbalanced Teams

If balanced teams are functioning in more appropriate ways than unbalanced teams, they should be using more of the Professional Assistance and Expertise categories. Table 3 shows the comparison for these categories between unbalanced and balanced teams, across all agenda categories. There is little difference between the two types of teams, although the balanced teams do show more acts in the indicated categories. With the small number of teams represented (four balanced and seven unbalanced teams), the prediction that balanced teams would be higher in these categories is not rejected but must await testing with a larger sample of teams.

Comparisons of unbalanced with balanced teams within agenda categories showed similar small differences, all in the "right direction," but none reaching statistical significance. The greatest difference between the two types of teams occurred in agenda category

Table 3

Transformed Scores for Unbalanced and Balanced Teams In Act Categories Four and Five, for all Agenda Categories

	Act Categories Four and Five Combined: Professional Assistance and Expertise
Transformed Scores	
Unbalanced Teams	538
Balanced Teams	464
Mean Scores	
Unbalanced Teams (Combined N = 30)	17.9
Balanced Teams (Combined N = 20)	23.2
Per Cent of Total Acts	
Unbalanced Teams	18%
Balanced Teams	24%

three, Learners. This comparison is shown in Table 4. For balanced teams, 41% of the acts occurred in act categories four and five, while only 26% of the acts for unbalanced teams fell in these categories. This difference, while not statistically significant, seems large enough to warrant further thought and investigation, especially because of the very large percentage of acts falling in act categories four and five for balanced teams (balanced team percentages for Curriculum Planning and Scheduling were 20% and 10% respectively). The reason that balanced teams might request and offer professional assistance, as well as use expertise much more when they are discussing

learners and learning than when they discuss other matters, and much more than unbalanced teams, is not clear. The figures could, of course, be biased due to small sample used. Further speculation, while interesting, should probably await more conclusive tests.

Table 4

Agenda Categories	Act Categories Four and Five Combined: Professional Assistance and Expertise
3. Learners	
Transformed Scores	
Unbalanced Teams	209
Balanced Teams	246
Mean Scores	
Unbalanced Teams (Combined N = 8)	26.1
Balanced Teams (Combined N = 6)	41
Per Cent of Total Acts	
Unbalanced Teams	26%
Balanced Teams	41%

DISCUSSION

The content analysis instrument developed for this study differentiated the kinds of comments made by team teachers discussing different topics. These differences validate at least some of the acts categories used in the content analysis. The reliability problem may be due to several factors, including the use of audio tapes which were not of the most desirable quality. Moreover, all

observers did reach criterion during their training, although they did not always continue to show evidence that the training was effective during the actual coding. This indicates that training procedures may also need modification, with systematic re-training sessions included.

Despite the reliability problem, some differences between balanced and unbalanced teams did appear in the results, although no statistically significant differences were found. The use of video tape may facilitate the coding of acts in future work, and the use of larger samples may aid in determining whether there are in fact differences between balanced and unbalanced teams in the way they go about making decisions about their instructional program.

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